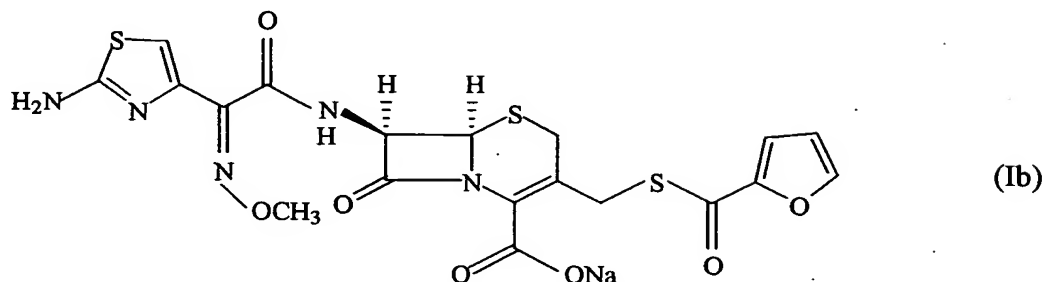


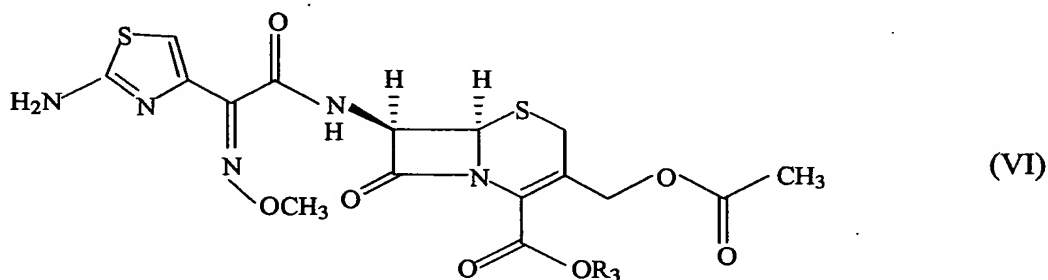
**ABSTRACT**

A process for preparation of ceftiofur sodium of formula (Ib)

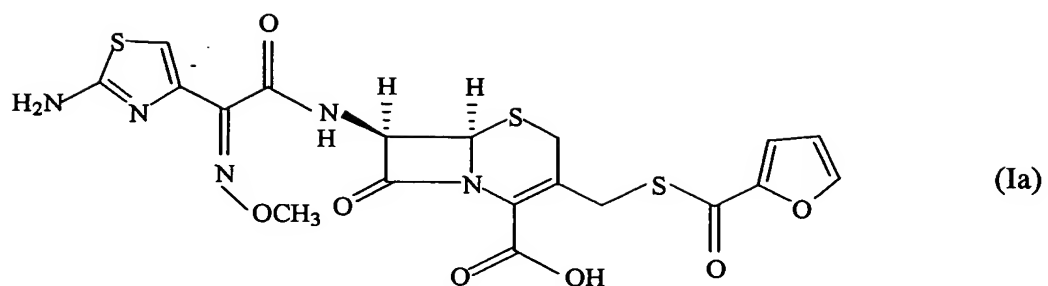


possessing high stability and having purity of more than 97% and substantially free of impurities, is disclosed. The process comprises:

- i) reacting cefotaxime or its salts or its esters of formula (VI)



wherein  $R_3$  is hydrogen, an alkali or alkaline earth metal, or an easily hydrolysable ester, with thiofuroic acid, employed in a molar proportion of 1.5 to 3.0 moles per mole of compound (VI), in the presence of acetonitrile as solvent and in the presence of large excess of methanesulfonic acid, employed in molar proportions of 12 to 18 moles per mole of compound (VI), and at a temperature of between  $-5^{\circ}\text{C}$  to  $30^{\circ}\text{C}$  to give after necessary neutralisation of the alkali or alkaline earth metal or removal of the ester group of the 4-carboxylic acid function, wherever applicable, ceftiofur of formula (Ia), possessing high stability and having purity of more than 97% and substantially free of impurities;



- ii) converting the ceftiofur of formula (Ia) thus obtained to its salt with an organic amine by treating a solution of ceftiofur in a mixture of water and a water-miscible organic solvent with an organic amine, at a temperature ranging from  $-10^{\circ}\text{C}$  to  $10^{\circ}\text{C}$ ;
- iii) reacting of the amine salt thus obtained with a sodium metal carrier in a mixture of water and water-miscible organic solvent and in presence of sodium hydrogen sulfite to give ceftiofur sodium of formula (Ib)